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Marked-Up Version of Substitute Specification

SPECIFICATION

DescriptionTITLE OF THE INVENTION

TELECOMMUNICATION MODULE COMPRISING HAVING A SYSTEM
DATA PROCESSING MEANSPROCESSOR FOR PERFORMING AT LEAST

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ONE TELECOMMUNICATION ACTIVITY

BACKGROUND OF THE INVENTION

The present invention relates to a telecommunication module comprising
having a system data processing meansprocessor for performing at least one
telecommunication activity and a first connecting meansconnector for connecting
15 the telecommunication module to an external electronic device.

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Telecommunication modules of this kind are known from the prior art. In general, and also within the context of the present invention, telecommunication modules are defined as telecommunication terminals whose functionality is limited exclusively to setting up, carrying out and terminating telecommunication connections.

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Therefore, tTelecommunication modules therefore have, for example, no man-machine interface (MMI) of their own for direct input and output of data by and to a user. For operating a conventional telecommunication module of this kind, an external electronic device is necessary which is connected to the telecommunication module via a special interface. The telecommunication activities of the telecommunication module are controlled via the external electronic device which is generally termed a control unit or "controller". Data to be transmitted via the telecommunication connection set up is transmitted by the controller to the telecommunication module and data received by the module is, in turn, transmitted from it to the controller. There are telecommunication modules, for example, for interfacing with mobile telecommunication networks (e.g., GSM modules for connections to GSM networks) or to fixed telephone networks (such modules are generally referred to as modems).

External electronic devices canmay include personal computers, (in particular, portable personal computers, such as laptops), as well as other devices

5 such as measuring instruments (e.g., electricity meters, heating meters, weather stations) which can be controlled via the telecommunication module and/or transmit the measured values via the telecommunication module and the corresponding telecommunication network to a central facility.

The disadvantage of telecommunication modules of this kind is that their
10 activities must be started by an external control device, the controller. To operate the telecommunication module, the controller ~~must~~—therefore always must be switched on,—~~i.e.~~, even if only in a kind of “standby mode” in readiness for receiving an incoming call. This causes unnecessary power consumption which is undesirable, particularly in the case of battery-operated control equipment.

15 In order to be able to adapt particular telecommunication modules to specific user requirements, there is, for example, a programming environment and interface, the so-called “MUSE platform” (MUSE: Modular User Software Environment) for the Wavecom company’s telecommunication modules (see e.g. <http://www.wavecom.com/products/index.php>). This allows a user to access the
20 operating/system software originally implemented in the telecommunication module so that he/she can selectively modify it. Part of this “MUSE platform” is a software development environment, a so-called “OPEN AT” package which permits the implementation of new, user-created applications in the original module system software. Information about “OPEN AT” can be found, for example, in a
25 Wavecom publication entitled “Take Command With OPEN AT” (Copyright Wavecom S.A. 10/2001) which is available on the Internet at “www.wavecom.com/products/docs/openATstec.pdf”.

Using the “OPEN AT” software development environment, new applications can be designed by a user or operator of the telecommunication module, ~~e.g.~~such as at a PC, integrated into the system software of the telecommunication module and then transmitted from the PC to the telecommunication module via a connection to said—the telecommunication module. This makes it possible to assign additional functionalities to the telecommunication module on a user-specific basis.

5 One disadvantage of this solution is that the new applications have to be
translated into the special system language of the telecommunication module,
which makes it costly to create the applications. Another disadvantage is that, by
implementing the new applications in the system software of the module, the
system software functionality may be changed and, in some cases, impaired (e.g.,
10 by modifying the jump instructions or memory addresses within the system
software). More serious faults in this area even may, in some cases, even
compromisetouch on the operability of the entire telecommunication module. In
some circumstances, such changes in the functionality of the system software may
even jeopardize approval of the equipment by the relevant authorities and/or
15 agencies.

Based on the prior art, the an object of the present invention is, therefore, to provide a low-cost solution for integrating into a telecommunication module additional functionalities and/or applications which can be easily created, set up, modified and/or deleted.

SUMMARY OF THE INVENTION

This object is achieved by a telecommunication module having a system data processing meansprocessor for performing at least one telecommunication activity, in particular particularly for creating and/or setting up and/or implementing and/or monitoring and/or terminating a telecommunication connection, a control data processing meansprocessor for automatically executing at least one control instruction sequence stored in the telecommunication module, said the control instruction sequence initializing at least one telecommunication activity of the system data processing meansprocessor, and a first connecting meansconnector for connecting the telecommunication module to an external electronic device, in particular, an external control unit or controller.

In a telecommunication module of this kind, additional applications and/or functionalities are implemented in the module in the form of control instruction sequences in the control data ~~processing means~~processor which is logically separated from the system data ~~processor~~processing means. This means that As such, there is no direct intervention in the system software in the

5 telecommunication module and the basic telecommunication functionality of the telecommunication module remains unchanged. Moreover, when formulating a control instruction sequence, the internal design of the system data ~~processing meansprocessor~~ does not need to ~~be into account accounted~~ for in detail or even modified. It is sufficient to be familiar with the basic functionality of the system
10 and to know how the functions implemented therein can be initialized, started or triggered by control instructions. This considerably simplifies the integration of new user-specific applications implemented as a control instruction sequence.

For processing the control instruction sequence, the individual control instructions are executed by the control data ~~processing meansprocessor~~. For this purpose, the control data ~~processing meansprocessor~~ are implemented, for example, in such a way that one or more telecommunication activities, such as establishing a telecommunication connection, reading out certain connection parameters, transmitting information, receiving information or terminating the telecommunication connection, are initiated with a control command. As part of the execution of this control instruction, the corresponding signals are transmitted from the control data ~~processorprocessing means~~ to the system data ~~processing meansprocessor~~. This process is comparable, in principle, to the initiation of this telecommunication activity by an external control device. In this way, additional functionalities, which in the case of conventional modules would require the involvement of an external unit, can be assigned to the telecommunication module by the control instruction sequence. According to the present invention, telecommunication modules ~~therefore~~—offer the possibility of enabling telecommunication activities to be performed under the control of both the control data ~~processing meansprocessor~~ and the external controller.
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30 In this way, the telecommunication module can, for example, independently monitor a connection, regularly request information concerning the surrounding base stations of a mobile communication network to determine the location, or regularly check a mailbox. This saves, e.g.~~for example~~, system resources of the connected control unit which, for example, can be in a switched-off or battery-saving standby state or even engaged in another ~~task~~task. For example, a
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5 telecommunication module according to the present invention, which has been set up to operate in a conventional mobile communication network (e.g., in compliance with the GSM or CDMA standard), ~~can also~~ can be used to monitor the connected telecommunication network for incoming calls ~~by means of~~via an application (control instruction sequence) additionally set up by a user. During this time, the
10 associated controller, e.g. such as a PC or measuring instrument, can be switched off. If a telecommunication connection is required from outside, the module is able to detect this and switch on the external control device for further operation of the telecommunication connection.

If the telecommunication module is to perform only quite~~very~~ specific functions implemented or stored in it as a control instruction sequence (or sequences), it is possible to operate the telecommunication module, at least temporarily, without a controller. This could be implemented, for example, for regular reading of meters and measuring instruments (e.g., heating meters, electricity meters, flow measuring equipment, weather stations), in which case the
20 telecommunication module could then, for example, read out the corresponding measured values at regular intervals and transmit them wirelessly to a collecting point. The meters and measuring instruments do not need to possess any controller characteristics for this purpose.

The An advantage of a telecommunication module according to the present invention is that, due to the separation of the control data processing means~~processor~~ from the system data processing means, the processing of a control instruction sequence (e.g. a subsequently implemented user-specific application) need not be performed inside the system data processing means~~processor~~. As the system data processing means is controlled via the control data processor~~processing means~~, for developing the control instruction sequence the emphasis has to be placed exclusively on the coherence of the control instruction sequence per se, the linking with the system data processor~~processing means~~ being assumed by the control data processor~~processing means~~. This means thatAs such, it is comparatively easy for new kinds of applications to be incorporated in the
30 telecommunication module, modified or deleted.
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5 A telecommunication module can also may contain a plurality number of
control instruction sequences which can be either can be logically interlinked or
independent performed independently of one another. The control data processing
meansprocessor assumes and coordinates the processing of the individual control
instruction sequences. This can be performed e.g., for example, either serially
10 (control instruction sequences are processed one after the other) or in parallel (in
accordance with a multi-tasking method that is known, per se).

The instructions which can be executed by the control data processing
meansprocessor can be represented in a way that is freely selectable by the
telecommunication module manufacturer. However, the control instruction
15 sequence advantageously includes at least one Java byte code instruction, in
particular, a Java 2 MicroEdition byte code instruction or at least one BASIC
instruction. These are essentially standardized instruction sets. The An advantages
of this is that a telecommunication module user does not first need to learn the
module's specific control command language but can use the generally known
20 standardized instruction sets. This simplifies the creation of applications and
shortens the familiarization time for the application manufacturer or developer. The
latter then only has to concern himself/herself with the features or characteristics of
the telecommunication module and how specific actions are initiated.

Efficient execution of stored control instruction sequences and efficient
25 production of the telecommunication module can be achieved if the control data
processing meansprocessor includes a storage means-area for storing the one or
more control instruction sequences and an execution means-part for executing the
one or more control instruction sequences. This means that As such, the application
area of the telecommunication module is separated from the system data processing
30 meansprocessor, and the actual application, (i.e., the stored control instruction
sequence and the associated execution meanspart), are demarcated from the system
data processing meansprocessor. The transition between application and system
area is provided by a connection between the execution means-part and the system
data processing meansprocessor. When designing a telecommunication module, for
35 example, this separation has the advantage that one and the same system data

5 processorprocessing means can be used, irrespective of whether a module with or without the possibility of implementing external control instruction sequences is provided. This reduces the development cost/complexity of such modules.

In order to enable the one or more control instruction sequences stored in the telecommunication module to be formulated, at least partially, in one of the 10 essentially standardized programming languages, the execution means-part for executing the command sequence can-may include an execution means-part for executing Java and/or BASIC program instructions. In this way, the above-mentioned advantages of using a standardized programming language can be used for creating the control instruction sequence.

15 In particular, the execution means-part for executing the user-specific application can be implemented as a Java virtual machine and/or BASIC interpreter. A Java virtual machine is an equipment-specific execution unit for programs in the so-called machine-independent Java byte code (generally designated by the suffix .class). A Java byte code of this kind is obtained if a 20 program consisting of the actual Java programming instructions (generally designated by the suffix .java) is translated by a translation program (Java compiler). This is the normal procedure for writing Java programs and generally takes place in the development environment for the Java program, in most cases a PC (personal computer), a workstation or a mainframe. After translation, the 25 machine-independent Java byte code is then transferred; e.g., to the telecommunication module.

The Java virtual machine can-also may be designed specifically for executing Java instructions associated with the above-mentioned Java 2 MicroEdition. This is a modification of the Java programming language specifically 30 for small data processing devices such as microcomputers, palmtops, organizers or even mobile telecommunication terminals.

In addition, the execution means-part can be implemented as a BASIC interpreter, i.e., for processing instructions associated with the BASIC programming language. Furthermore, the execution means-canpart also may be a 35 combination of Java virtual machine and BASIC interpreter. In this case, the

5 execution ~~means-part~~ can recognize the instruction family to which an individual control instruction belongs and then process it accordingly. In this way, the advantages of the individual programming languages can be combined in a particularly ~~favorably~~favorable manner.

10 The execution ~~means-can comprise~~part may include electronic circuits and possibly software components stored therein, these being of the type commonly used in data processing devices such as personal computers or minicomputers for comparable applications.

15 In order to be able to flexibly adapt the telecommunication module to the user's needs, the control instruction sequence can be advantageously created and/or modified and/or deleted by the external electronic device via the first ~~connecting means~~connector. In this respect, the electronic device can be, for example, a personal computer (PC) on which the user-specific control instruction sequence can be developed and from which it ~~can~~—then can be transmitted to the telecommunication module. If required, the PC ~~can~~—also can read out again and 20 modify or even delete the control instruction sequences/applications stored in the telecommunication module. In addition, the external electronic device can also be a measuring instrument containing facilities for implementing, modifying or deleting applications in the telecommunication module. These ~~can~~, in turn, be set up there, for example, by a computer which can be connected to the measuring instrument, 25 and transmitted to the telecommunication module by operating elements on the measuring instrument or deleted or modified from there.

30 The above-described object ~~can~~—likewise may be achieved by a method for controlling a telecommunication module wherein the telecommunication module ~~comprises~~includes a system data ~~processing means~~processor for performing at least one telecommunication activity, a control data ~~processor~~processing means, a first ~~connecting means~~connector for connecting the telecommunication module to an external electronic device and a second ~~connectore~~connecting means for connecting the control data processing means to a system data ~~processing means~~processor, a control instruction sequence being additionally stored in the 35 telecommunication module which is autonomously executed and implemented in

5 such a way that, when executed, it initiates the one or more telecommunication activities of the system data processorprocessing means.

The method described enables telecommunication activities of a telecommunication module, which are performed by the system data processorprocessing means present in the telecommunication module, to be
10 initiated by a control program (control instruction sequence,—e.g., user-specific application) which remain stored in the telecommunication module.

The stored control instructions are interpreted by the control data processing meansprocessor which then initiates appropriate actions such as starting a telecommunication activity. This method employs the advantageous principal
15 described above of implementing control data processing means—which remain separate from the system data processing means—of the telecommunication module and which execute the control instruction sequences stored in said—the telecommunication module. The fact that access to the system data processing meansprocessor takes place according to the present invention via the control data
20 processing meansprocessor has the advantage that, when creating the control instruction sequence, the details of the system data processing meansprocessor do not need to be taken into account. This makes user-specific applications considerably easier to produce.

The controlling of conventional telecommunication modules via external
25 control devices or controllers generally takes place via so-called AT control commands. With these AT control commands, the control unit or controller initiates the required telecommunication activities in the telecommunication module. In order to optimize the development time for the telecommunication modules according to the present invention and subsequent applications therefor, AT control
30 commands can—likewise may be used, from the control data processing meansprocessor, for controlling the system data processing means. These are then transmitted by the control data processorprocessing means to the system data processorprocessing means via the second connecting meansconnector as part of executing a control instruction sequence/application. As the system data processing meansprocessor is generally already set up for executing the AT control commands
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5 (for control by the external controller), in some cases the configuration of the system data ~~processor~~processing means can be taken over from conventional modules, with only slight modifications, for developing telecommunication modules according to the present invention. This optimizes the development cost/complexity for modules according to the present invention. A combination of
10 AT control commands and other control commands ~~can also~~ may be used for controlling the system data ~~processing means~~processor. This enables the functionality of the module to be additionally extended.

An advantageous embodiment of the control data ~~processing means~~processor emerges if the one or more control instruction sequences contain at
15 least one Java byte code instruction; in particular, a Java 2 MicroEdition byte code instruction or at least one BASIC instruction. As Java, Java 2 MicroEdition and BASIC are essentially standardized programming languages, these are particularly easy to learn or already known by the user. The use of such instructions saves user time and effort for programming the control instruction sequences and allows a
20 degree of portability of newly developed applications between different modules.

In addition, the control data ~~processing means~~processor may be suitable for transferring data to the external electronic device via the first ~~connecting means~~connector. In this way, for example, an application running in the telecommunication module can then e.g.—transfer data, which the
25 telecommunication module has received via a telecommunication connection, to the connected external electronic device. This ~~can-might~~ be, for example, text, image or control data received via the telecommunication network. In this context, control data can be, for example, instructions to be executed directly or even program sections, modifications or entire applications to be implemented in the electronic
30 device. In this way, for example, a remote user can control the external electronic device directly via the telecommunication device and initiate specific activities thereat. Moreover, the data transmitted from the control data ~~processing means~~processor to the external electronic equipment ~~can also~~ may be data which has been generated in the telecommunication module itself. This ~~can-may~~ be data
35 relating to the existing telecommunication connection (e.g., transmission rates,

5 transmit power, nearest base station, present call duration) but also, for example, control instructions; e.g., for switching the external device on or off.

The control instruction sequence stored in the telecommunication module can be run in various ways. For example, it can be initiated by the external electronic device. In addition, execution of the user-specific application can be 10 initiated by establishing a connection from the telecommunication module to a power supply device. ~~This means that~~As such, for example, when the telecommunication module is plugged into the appropriate mounting facility of a computer or measuring instrument, an application such as searching for a connection to a communication network is executed automatically. It is also 15 possible for a corresponding application to be initiated both when establishing a connection to a power supply device and by the external electronic device.

In addition, the control instruction sequence can be implemented in such a way that the instruction sequence, or part thereof, can, if necessary, be repeated at least once after a specified intervening time period has elapsed. This multiple 20 execution of an application, or part thereof, is suitable, e.g.for example, for monitoring a telecommunication connection or for implementing a standby mode in which the telecommunication module, for example, regularly checks only whether a connection request from the telecommunication network to the module is present.

Another possible application for using telecommunication modules in 25 wireless communication networks such as, for example, a GSM network, is for the independent regular checking of the connection data to the surrounding base stations by the module. This data ~~can then~~can, for example, continue to be transmitted to the external electronic device or ~~can~~ be transmitted by SMS (Short Message Service) to a particular receiver in the telecommunication network for determining the location of the module. In the second case, the external electronic 30 device would not be involved in the application in any way.

Additional features and advantages of the present invention are described in, and will be apparent from, the following Detailed Description of the Invention and the Figures.

35 ~~Further preferred embodiments will be set forth in the sub-claims.~~

5 The invention will now be described in exemplary fashion with reference to
the accompanying drawings in which:

BRIEF DESCRIPTION OF THE FIGURES

Figure 1 shows a block diagram of the telecommunication module according to the present invention.

10 DETAILED DESCRIPTION OF THE INVENTION

Figure 1 shows, by way of example, the basic configuration of a telecommunication module 10 according to the present invention. This ~~comprises~~includes, in the area of the system data ~~processing means~~processor 20, 22, 24, an area for storing and executing the actual module system software 22 which controls the operation of the basic telecommunication activities of the module 10. The system data ~~processor~~processing means 20, 22, 24 also includes an AT command interpreter 20 which translates AT control commands to the module's system language and transfers them between AT command interpreter 20 and system 22 via the connection 24. The telecommunication module 10 additionally ~~comprises~~includes an area for executing control programs (script interpreter) 30 which, in this context are also known as scripts. One or more control programs or scripts are stored in the memory 32 and transferred from there via the connection 34 to the control data ~~processing means~~processor referred to as a script interpreter. Depending on the instruction executed, the script interpreter 30 transmits signals and/or data via the connection 26 to the AT command interpreter or via the connection 28 directly to the system area of the module or via the connection 36 to the serial interface 40 of the module. The serial interface 40, e.g.~~such as~~ such as a GPRS (General Purpose Input/Output), RS 232 or V.24 interface of the module, ~~comprises~~includes electronic circuits and connection ~~means~~parts for establishing a connection 44 to an external control unit 42, the functionality of the interface 40 also being modifiable by the telecommunication module 10.

The telecommunication module 10 illustrated is a telecommunication module 10 for a wireless mobile communication network to which the telecommunication module 10 is or can be connected via the antenna 50.

5 Via an external control unit 42, e.g.such as a PC, a new application for the telecommunication module can be transferred via the connection 44, the serial interface 40 and the ~~connection~~connections 36 and 34 to the memory area 32 for the control instruction sequence. If the external electronic device then sends a start instruction to the script interpreter 30 to execute the control instruction sequence, or
10 if the script interpreter 30 starts the control instruction sequence itself, the latter loads the relevant control instructions from the memory area 32 via the connection 34 and executes them accordingly. If the control instruction indicates, for example, that a particular telecommunication activity is to be initiated via an AT command, the script interpreter 30 transmits the corresponding AT command via the
15 connection 26 to the AT command interpreter 20. The latter, in turn, forwards the data corresponding to the AT command via the connection 24 to the system area 22 of the telecommunication module. The module system then performs the corresponding communication activities via the antenna 50. Data received in this process can, in turn, for example, be fed back via the connection 28 from the
20 system area to the script interpreter area. This can either process the corresponding information or forward it via the serial interface 40 to the external unit 42.

Using a telecommunication module 10 as shown in Figure 1, it is possible, for example, to locate the telecommunication module 10 in a GSM mobile network without involving the external controller 42. For this purpose, a control instruction sequence stored in a memory area 32 is formulated in such a way that the telecommunication module 10 periodically solicits connection information such as channel number, adjacent cells or receive level of the current cell via the execution of specific AT commands. The information is transferred from the module system 22 to the script interpreter 30. Moreover, the~~The~~ control program is ~~moreover~~ designed in such a way that it causes this data to be transmitted by SMS from the module system 22 via the antenna 50 to a remote receiver which uses this information to determine the location of the telecommunication module.

The outputting of strings to an external display unit, for example, ~~can also~~may be implemented in a similar way.

5 In addition, for example, an application which, at least among other things, forwards control instructions received via the telecommunication network for controlling the external unit 42 to said-the external unit 42 can be set up in the memory area 32 of the module 10.

The present invention describes a telecommunication module and a method
10 for operating a telecommunication module which includes a control data processing
meansprocessor for automatically executing at least one control instruction sequence stored in the telecommunication module, the one or more control instruction sequences being implemented in such a way that, when executed, they initiate at least one telecommunication activity of the system data
15 processorprocessing means of the telecommunication module. Through the possibility of integrating and running applications in the telecommunication module independently of the operating system of said-the telecommunication module, the possible uses of telecommunication modules are significantly increased. This additionally makes it possible, in particular, for simple monitoring activities of the
20 controller normally connected to the telecommunication module to be transferred to said-the telecommunication module, thereby reducing the controller workload. In this way, the actual activity of the controller (e.g., measuring instrument or PC) can
25 may be speeded speed up and the energy resources of the controller can be protected. For standard applications it is additionally possible to dispense with an external controller and to implement the control activities via control instruction sequences within the module.

Although the present invention has been described with reference to specific
embodiments, those of skill in the art will recognize that changes may be made
thereto without departing from the spirit and scope of the present invention as set
30 forth in the hereafter appended claims.

Reference character list

- 10 — Telecommunication module
- 20 — AT command interpreter
- 22 — Module system software (Telecom)
- 10 24 — AT interpreter / system transition
- 26 — Script interpreter / AT interpreter transition
- 28 — Script interpreter / system transition
- 30 — Script interpreter
- 32 — Script memory
- 15 34 — Script interpreter / script memory transition
- 36 — Script area / serial interface transition
- 40 — Serial interface
- 42 — External controller
- 44 — Serial interface / controller transition
- 20 50 — Antenna

ABSTRACT

The invention relates to a telecommunication module (10) comprising is provided which includes a system-data processing means (20, 22, 24) processor for carrying out at least one telecommunication activity, a control data processor processing means (30, 32, 34) for automatically executing at least one 10 control command sequence stored in the telecommunication module, said the control command sequence being configured in such a way that it triggers the at least one telecommunication activity of the system processing means processor during execution, and a first connecting means (40) connector for connecting the telecommunication module (10) to an external electronic device (42).

5 This listing of claims will replace all prior versions, and listings, of claims
in the application:

Listing of claims:

Claims 1-14 canceled.

10 Claim 15 (new): A telecommunication module, comprising:
a system data processor for performing at least one telecommunication
activity, the at least one telecommunication activity being at least one of creating,
setting up, implementing, monitoring and terminating a telecommunication
connection;

15 a control data processor for automatically executing at least one control
instruction sequence stored in the telecommunication module, the at least one
control instruction sequence being implemented such that, upon execution, the at
least one telecommunication activity is initiated; and

 a connector for connecting the telecommunication module to an external
electronic device.

20 Claim 16 (new): A telecommunication module as claimed in Claim 15,
wherein the at least one control instruction sequence contains one of at least one
Java 2 MicroEdition byte code instruction and at least one BASIC instruction.

25 Claim 17 (new): A telecommunication module as claimed in Claim 15,
wherein the control data processor includes a storage part for storing the at least
one control instruction sequence and an execution part for executing the at least one
control instruction sequence.

30 Claim 18 (new): A telecommunication module as claimed in Claim 17,
wherein the execution part executes at least one of Java instructions and BASIC
instructions.

5 Claim 19 (new): A telecommunication module as claimed in Claim 17,
wherein the execution part includes at least one of a Java virtual machine and a
BASIC interpreter.

10 Claim 20 (new): A telecommunication module as claimed in Claim 15,
wherein the at least one control instruction sequence may be at least one of setup,
modified and deleted by the external electronic device via the connector.

Claim 21 (new): A method for controlling a telecommunication module,
the method comprising:

15 providing that the telecommunication module include a system data
processor for performing at least one telecommunication activity, the at least one
telecommunication activity being at least one of creating, setting up, implementing,
monitoring and terminating a telecommunication connection;

20 providing that the telecommunication module include a control data
processor;

 providing that the telecommunication module include a first connector for
connecting the telecommunication module to an external electronic device;

 providing that the telecommunication module include a second connector
for connecting the control data processor to the system data processor;

25 storing at least one control instruction sequence in the telecommunication
module; and

 automatically executing the at least one control instruction sequence stored
in the telecommunication module such that the at least one control instruction
sequence initiates the at least one telecommunication activity of the system data
processor.

35 Claim 22 (new): A method for controlling a telecommunication module as
claimed in Claim 21, wherein for the automatic execution of the at least one control
instruction sequence, at least one AT control command is transmitted from the
control data processor via the second connector to the system data processor.

5 Claim 23 (new): A method for controlling a telecommunication module as claimed in Claim 21, wherein the at least control instruction sequence includes one of at least one Java 2 MicroEdition byte code instruction and at least one BASIC instruction.

10 Claim 24 (new): A method for controlling a telecommunication module as claimed in Claim 21, wherein the data is transferred from the control data processor via the first connector to the external electronic device.

15 Claim 25 (new): A method for controlling a telecommunication module as claimed in Claim 24, wherein the data contains instructions for controlling the external electronic device.

20 Claim 26 (new): A method for controlling a telecommunication module as claimed in Claim 21, wherein the at least one control instruction sequence stored in the telecommunication module may be at least one of created, modified and deleted by the external electronic device.

25 Claim 27 (new): A method for controlling a telecommunication module as claimed in Claim 21, wherein the automatic execution of the at least one control instruction sequence is initiated by at least one of the external electronic device and establishment of a connection from the telecommunication module to a power supply device.

30 Claim 28 (new) A method for controlling a telecommunication module as claimed in Claim 21, wherein the at least one control instruction sequence is implemented such that one particular control instruction sequence is repeated at least once.

5 Claim 29 (new): A method for controlling a telecommunication module as
claimed in Claim 28, wherein the repetition of the one particular control instruction
sequence occurs once a specified intervening time period has elapsed.

REMARKS

The present amendment makes editorial changes and corrects typographical errors in the specification, which includes the Abstract, in order to conform the specification to the requirements of United States Patent Practice. No new matter is added thereby. Attached hereto is a Substitute Specification including a marked-up version of the changes made thereto via by the present amendment.

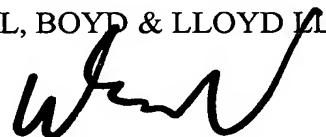
In addition, the present amendment cancels original claims 1-14 in favor of new claims 15-29. Claims 15-29 have been presented solely because the revisions by red-lining and underlining which would have been necessary in claims 1-14 in order to present those claims in accordance with preferred United States Patent Practice would have been too extensive, and thus would have been too burdensome. The present amendment is intended for clarification purposes only and not for substantial reasons related to patentability pursuant to 35 U.S.C. §§101, 102, 103 or 112. Indeed, the cancellation of claims 1-14 does not constitute an intent on the part of the Applicants to surrender any of the subject matter of claims 1-14.

Early consideration on the merits is respectfully requested.

Respectfully submitted,

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